REMARKS

Claims 1-4, 7, 8, 10-13, 16, 17, 19 and 20 stand rejected under 35 U.S.C. § 103 as unpatentable over applicant's admitted prior art in view of Su (6,122,611). Claims 9 and 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over applicant's admitted prior art and Su and further in view of well-known prior art. Finally, claims 5, 6, 14 and 15 stand rejected under 35 U.S.C. § 103 as being unpatentable over applicant's admitted prior art in view of Su and further in view of Aoyagi (5,752,223).

The Examiner's rejections are respectfully traverse.

The Examiner correctly recognizes that applicant's admitted prior art does not teach identifying voice and signals of a speech signal using the decoded information. In order to supply this missing ingredient, the Examiner turns to be Su reference. The Examiner, in particular, points to Figure 5 and the voice activity detector 506 shown therein. As discussed in column 5 of Su, the voice activity detector detects the non-speech periods from the speech periods within the received synthesized speech signal 512. The output of the voice activity detector circuit 506 is labeled as a signal 514, and this signal is sent both to the noise generator 504 and to the adder 508. The noise generator circuit 504 utilizes this signal 514 "to aid it in the production of the simulated background noise signal 516." See column 5, lines 47-49. It is further stated that the noise generating circuit 504 utilizes a subset of the energy and a subset of the linear prediction coefficients of signal 510 to produce a simulated background noise signal 516 which is transmitted to the adder circuit 508. See col. 5, lines 20-25. From this description, it is not clear exactly how the signal 514 is utilized in the noise generator circuit 504. It is clear, however, that it is utilized in the production of the simulated background noise signal 516. It is also noted that Su teaches that the signal 514 is further fed to the adder 508 in order to indicate to the adder when to allow the synthesized non-speech periods to pass through to its output.

In contrast, applicant's invention has recited in independent claim 1, however, performs the smoothing process in the unvoiced speech. The smoothing process is based on the decoded information for at least either one of the decoded gain and the

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decoded filter coefficients. In turn, the multiplication of the decoded sound source by the decoded gain uses a result of this smoothing processing.

It may thus be seen that Su utilizes a voice activity detector to feed a noise generator which in turn produces a simulated background noise signal.

Thus, it is true that Su teaches identifying voiced speech and unvoiced speech but in fact, Su utilizes this voice/unvoiced speech signal in a completely different manner than as taught and recited in applicant's claims. Applicant's claims simply do not recite identifying the voice speech and the unvoiced speech in the abstract but rather recite this set as part of the overall speech decoding method and in particular use the result of the smoothing processing for the unvoiced speech in multiplying the decoded sound source signal by the decoded gain. Thus, even if one were to combine Su with applicant's prior art, it is completely unclear as to how one would make such modification and how one would incorporate the teaching of Su into applicant's admitted prior art. Moreover, there is simply no motivation in Su nor in applicant's admitted prior art to combine the two references.

Finally, even assuming that applicant's admitted prior art could be some how logically combined with Su, the combination of the two teachings still do not make out a *prima facie* case of obviousness under the provisions of 35 U.S.C. § 103. The two prior art teachings together simply do not disclose each and every feature of applicant's claim 1 as discussed above.

In order to better distinguish applicant's invention from the prior art, applicant has clarified that the smoothing is performed only in the unvoiced speech. Similar clarifications have been made to the remaining independent claims 10, 19, 20. As such, it is submitted that all of applicant's claims clearly define over the prior art. Applicant's dependent claims are likewise deemed to be patentable since these dependent claims depend directly or indirectly upon the independent claims from which they depend.

As further clarification, the present invention is characterized in that, in the unvoiced speech (a section where only the noise exists without the voiced speech), the "decoded information", which expresses the noise signal (including a voice parameter comprising of the gain and the filter coefficient), is smoothed in terms of time in accordance with a voice parameter (and in acordance with the kind of noise signal), in other words, the noise signal power in the section is smoothed in terms of time.

As a result of this, it has the effect of improving the quality of the noise in the unvoiced speech appropriately in accordance with the kind of the noise signal (e.g., the deterioration of noise is reduced).

In the embodiment and the drawings, this corresponds to changing the filter to be used for smoothing in accordance with the kind of the noise signal.

On the other hand, according to Su et al. (US 6,122,611), in the voiced speech (a section of the voice in which the noise is superimposed), the noise generated by the simulation is further added to the voice (on which noise is superposed). (For example, reference is made to the Abstract, lines 14-20, "the present invention adds simulated background noise to decoded noisy speech when synthesizing the noisy speech signal during voice activity periods.

As a result of this, by increasing the amplitude of the noise in said voiced speech, the amplitude of the noise is arranged not to change suddenly between the unvoiced speech and the voiced speech.

From the above, it may be seen that the present invention and Su are completely different from each other in all of their objects, construction, and effect.

In addition, as for Aoyagi, what the Examiner has pointed out does not have anything to do with the above-mentioned smoothing features according to the present invention. As for these references, there is absolutely no relevance whatsoever to the present invention in terms of the object, the constitution, and the effect, just like Su.

The application is now considered to be in condition for allowance and an early indication of same is earnestly solicited.

Respectfully submitted,

Date <u>May 5, 2003</u>   By _____

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